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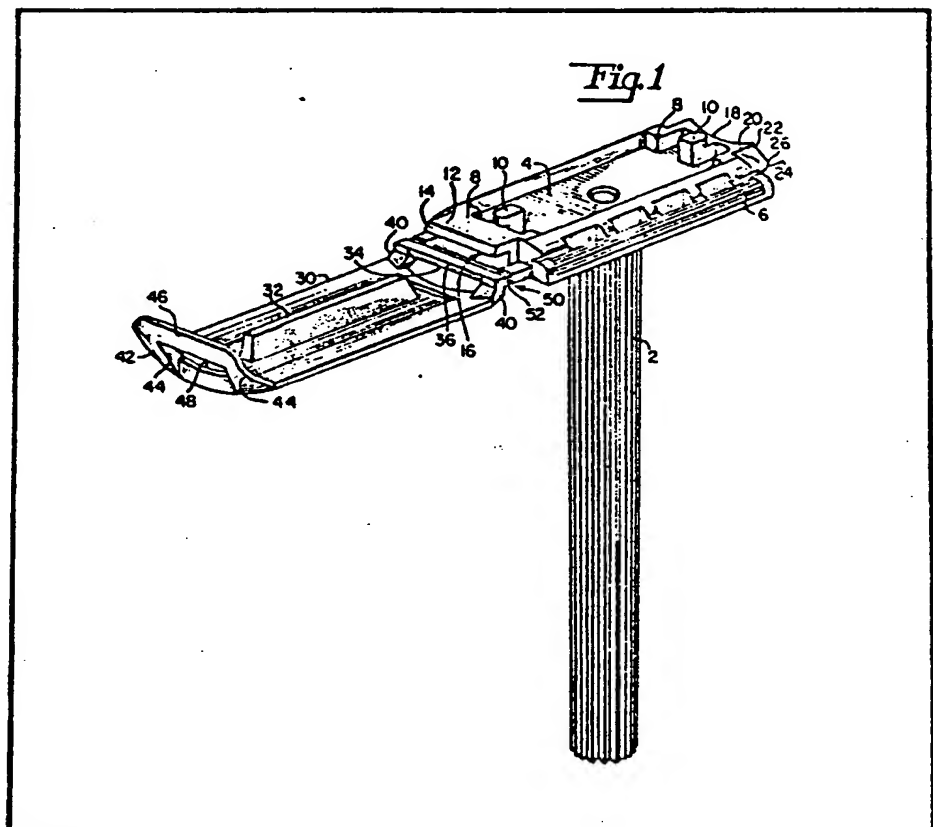
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 (71) Applicant
 The Gillette Company,
 Prudential Tower
 Building, Boston,
 Massachusetts 02199
 United States of America
 (72) Inventor
 Norman David Poisson
 (74) Agent
 A. A. Thornton & Co.

(54) Safety Razor

(57) A safety razor comprises a handle portion (2), a platform portion (4) moulded from plastics material integrally with the handle portion, a cap portion (30) moulded integrally with the platform portion, and a hinge

portion (50) interconnecting the platform portion and the cap portion. In its operating position in which it overlies the platform portion, the cap portion (30) is releasably secured to the platform portion by respective coupling means (46, 24 and 36, 16) at opposite ends of the razor head.



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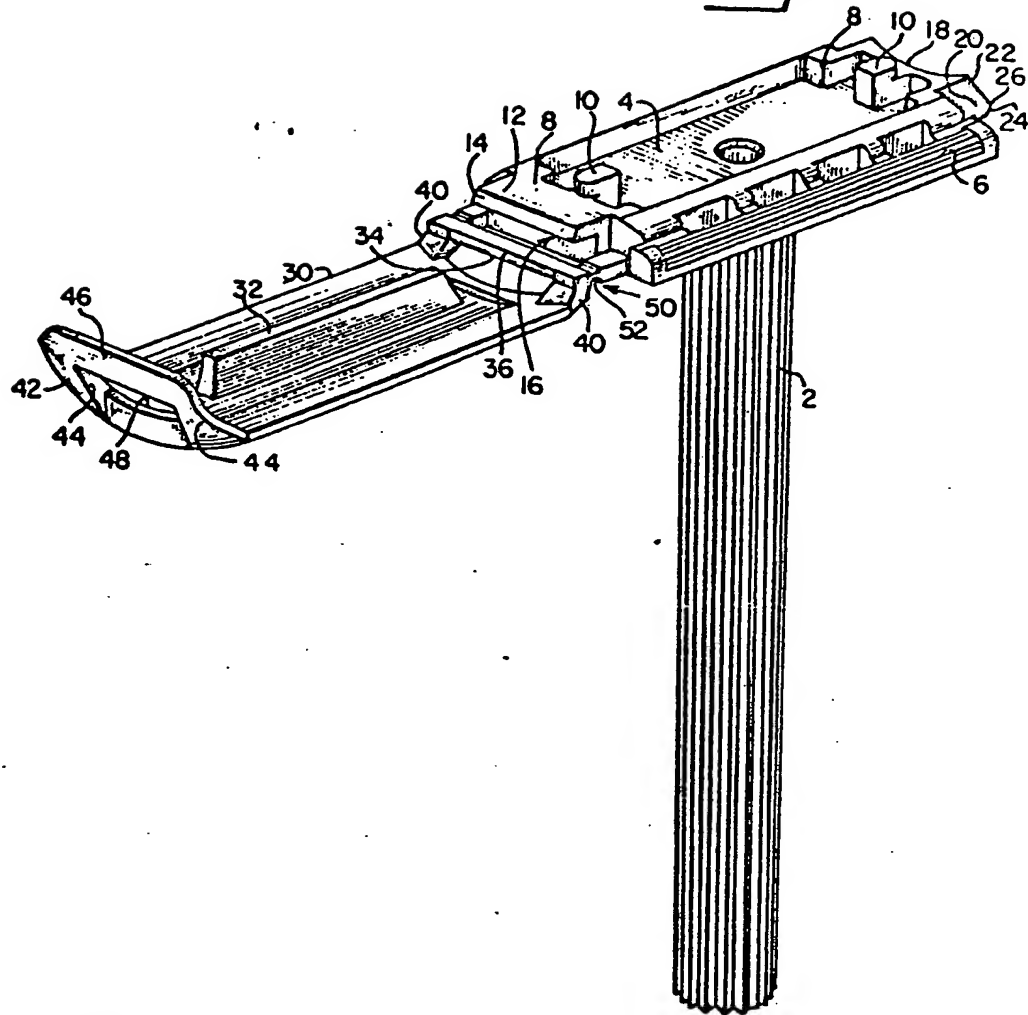
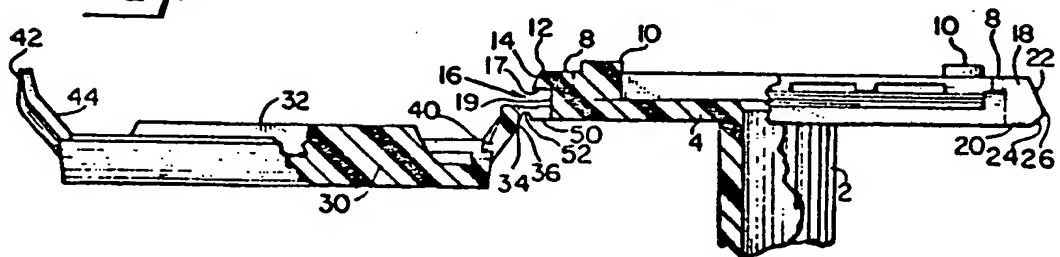
Fig. 1Fig. 2

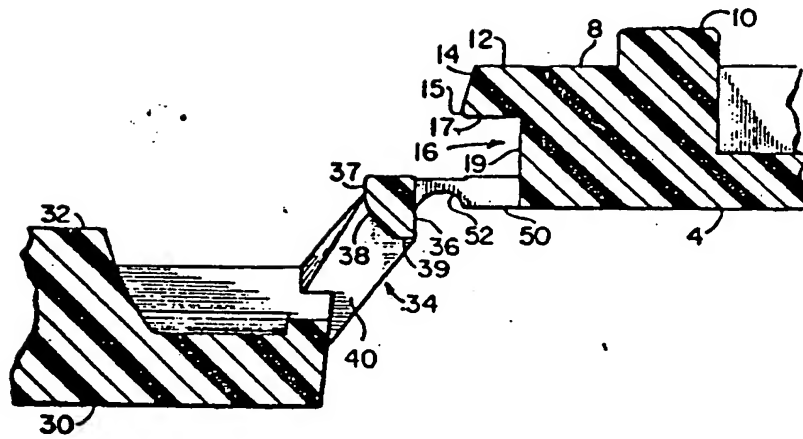
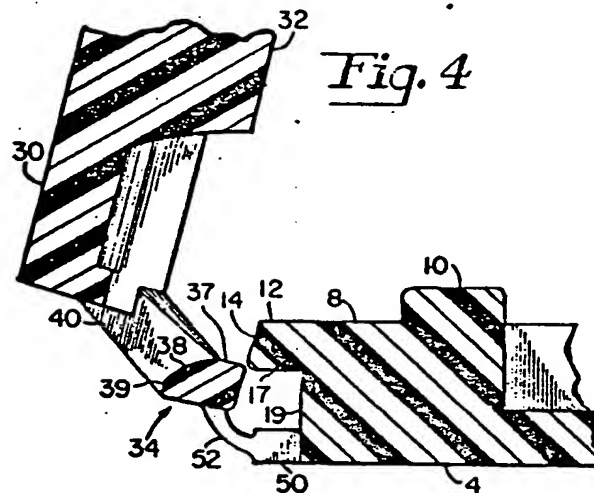
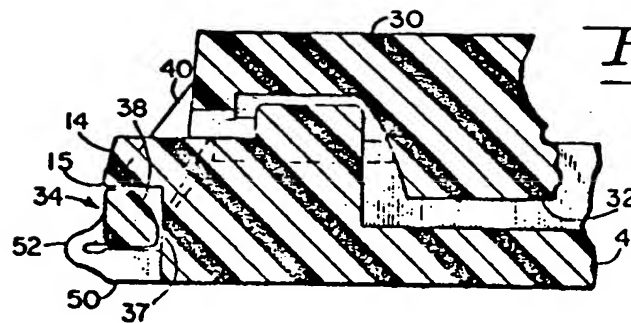
Fig. 3Fig. 4Fig. 5

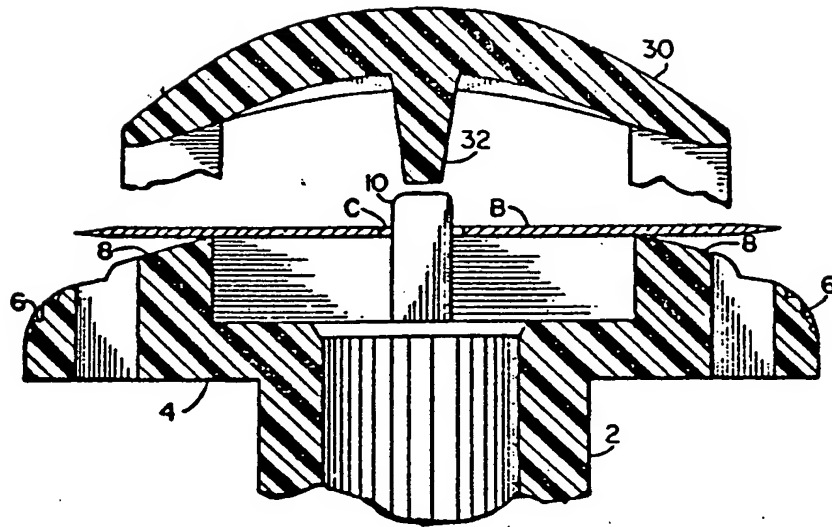
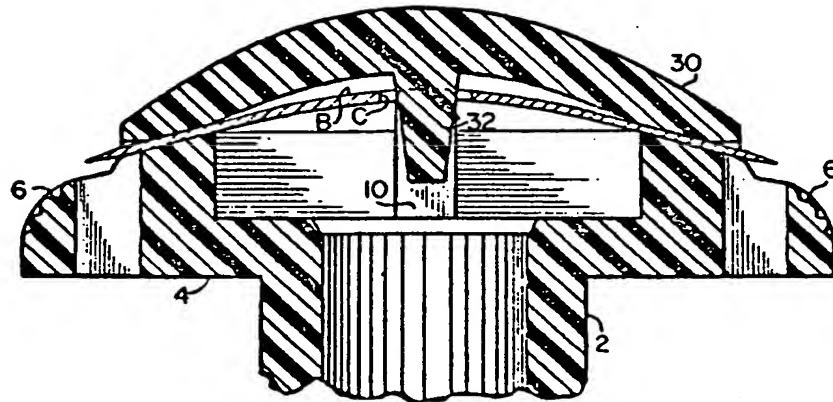
Fig. 6Fig. 11

Fig. 7

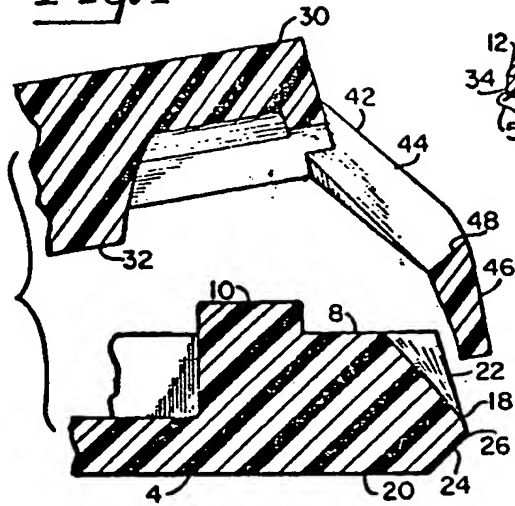


Fig. 10

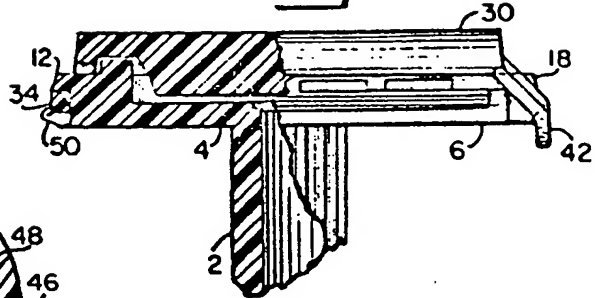


Fig. 12

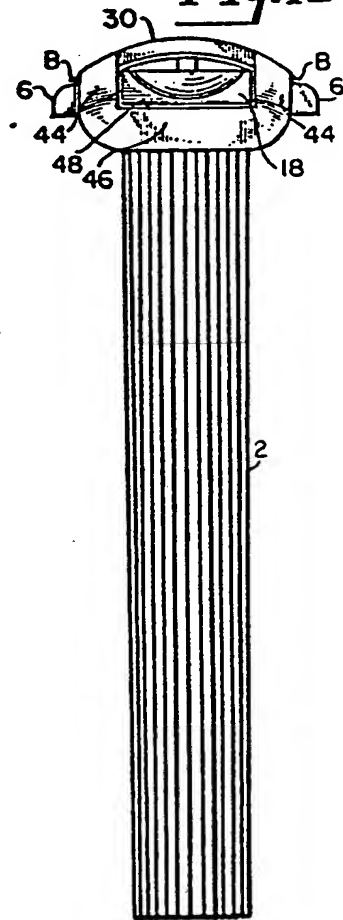


Fig. 8

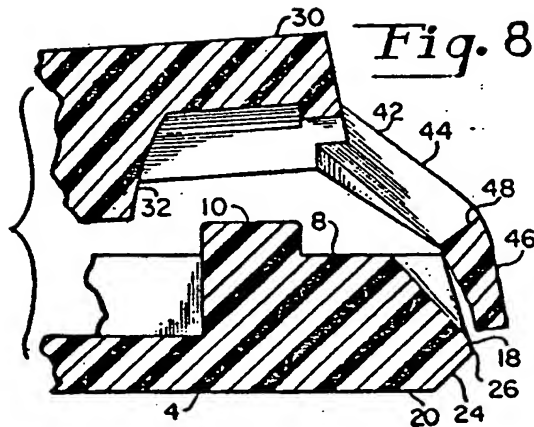
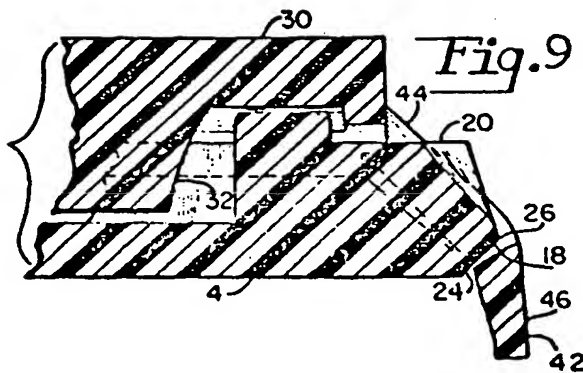


Fig. 9



SPECIFICATION

Safety Razors

This invention relates to safety razors.

Razors made entirely of plastics materials are known in the prior art. For example, U.S. Patent No. 3,675,323 issued July 11, 1972 to Paul A. Braginetz discloses an all-plastics double edge razor in which the handle and platform portions are moulded as one member, and a cap portion, moulded separately, is joined to the platform portion.

There have been attempts to simplify even further the manufacture of such razors by having the cap portion moulded integrally to the platform portion by means of a living hinge. The living hinge permits the cap portion, by flexure of the hinge, to be brought to a position overlying the platform portion, the cap portion then being typically snapped-fitted to the platform portion, with blade means therebetween, the snap-fit means being disposed at the end of the razor head remote from the living hinge. In such embodiments, a shortcoming has been that the living hinge has been depended upon as a fastening element for retaining the cap portion clamped to the platform portion. Almost invariably, the living hinge fails to exercise sufficient clamping force to retain the cap portion securely in fixed position relative to the platform portion, particularly after a period of use.

Razors other than of moulded material have been provided with pivotally mounted cap portions, as for example, those shown in U.S. Patents 3,650,027, issued March 21, 1972 to Charles F. Stephenson, and 3,653,126 issued April 4, 1972 to Philip W. King, which disclose razor cap portions pivotally mounted at one end thereof, the razors being provided with means axially of the handle for clamping the cap portion in a position overlying the platform portion. In U.S. Patent No. 1,940,563, issued July 29, 1932 to F. Porter, et al, a pivotally mounted cap portion is secured to the platform portion at one end by its hinge mechanism and at the other end by a locking structure.

In accordance with the present invention, there is provided a safety razor comprising a handle portion, a platform portion moulded integrally with the handle portion, a cap portion moulded integrally with the platform portion, a hinge portion at a first end of the platform portion and a first end of the cap portion interconnecting the platform portion and the cap portion, the cap portion having first cap locking means at its first end thereof and second cap locking means at a second end thereof, the platform portion having first platform locking means at its first end and second platform locking means at a second end thereof, the cap portion being adapted by flexure of the hinge portion to overlie the platform portion, the first cap locking means being engageable with the first platform locking means to securely fasten the first cap end to the first platform end, and the second cap locking means

being engageable with the second platform locking means to securely fasten the second cap end to the second platform end.

One form of safety razor in accordance with the invention is described below, by way of example, with reference to the accompanying drawings, in which:—

Figure 1 is a perspective view of one form of safety razor illustrative of an embodiment of the invention;

Figure 2 is a front elevational view, partly broken away, of a portion of the razor shown in Figure 1;

Figure 3 is an enlarged sectional view of the hinge portion and a first locking portion of the safety razor;

Figure 4 is similar to Figure 3, but showing the components in a different position;

Figure 5 is similar to Figure 4 but showing the components in a still different position;

Figure 6 is a sectional view of the head portion of the razor, the components being shown in position prior to locking of the cap and platform portions together;

Figure 7 is an enlarged sectional view of a second locking portion of the razor;

Figure 8 is similar to Figure 7 but showing the components in a different position;

Figure 9 is similar to Figure 8 but showing the components in a still different position;

Figure 10 is a front elevational view, partly broken away similar to Figure 2 but showing the components in a different position;

Figure 11 is a sectional view similar to Figure 6, but showing the components in a locked position; and

Figure 12 is a side elevational view.

Referring to the drawings, it will be seen that the safety razor of the present invention includes a handle portion 2 of moulded plastics material. A platform portion 4 is moulded integrally with the handle portion 2 and extends transversely thereof.

The platform portion 4 includes guard portion 6, blade seat portion 8 for receiving a razor blade B, and upstanding projection 10 adapted to engage a centre opening C in the razor blade. The platform portion 4 is further provided at a first end thereof with a first platform locking means 12 (Figures 3—5) which comprises an outwardly extending lip 14 having a rounded edge 15 and defining a recess 16 having walls 17, 19 normal to each other. The platform portion 4 is further provided at a second end thereof (Figures 7—9) with a second platform locking means 18 comprising an endwise extension 20 having a first inclined surface 22 and a second inclined surface 24 cooperatively defining a ridge 26.

Moulded integrally with the platform portion 4 is a cap portion 30 (Figures 1—5) having a ridge 32 extending therefrom and adapted to enter the aforementioned centre opening C of the razor blade B (Figure 7). The cap portion 30 is provided at a first end thereof with a first cap locking means 34 (Figures 1—5) comprising a bar 36 having a curved surface 38 disposed between flat

surfaces 37 and 39 normal to each other. The bar 36 is supported by a pair of fingers 40 extending from the first end of the cap portion. The curved surface 38 is engageable with the rounded edge

- 5 15 of the lip 14, as will be discussed below. The cap portion 30 is provided at a second end thereof with a second cap locking means 42 (Figures 1, 7—9 and 12) comprising a pair of legs 44 extending from the second end of the cap portion and interconnected by a bridge portion 46, the bridge portion 46, legs 44 and second end of the cap portion 30 defining an opening 48 adapted to receive the second platform locking means extension 20, as will be further discussed below.

- 20 The safety razor further includes a hinge portion 50 (Figures 1—5) interconnecting the first end of the platform portion 4 and the first end of the cap portion 30. The hinge portion 50 includes a narrow-necked portion 52, which portion permits the flexure of the hinge portion, as shown in Figures 3 to 5 to accommodate movement of the cap portion 30 to a position overlying the platform portion 4.

- 25 In operation, the razor, as shown in Figures 1, 2 and 3 is in the open position and ready to receive a blade member B therein. The blade member B is placed upon the blade seat portions 8 of the platform portion 4, the projections 10 extending through the centre opening C of the blade, as shown in Figure 6. The cap portion 30 is then moved to a position overlying the platform portion 4. In doing so, the narrow-necked portion 52 of the hinge portion 50 flexes, as is shown in Figure 4, to allow the cap portion to be moved to its overlying position. Further movement of the cap portion causes the second cap locking means 42 to approach the second platform locking means 18, as shown in Figure 7. Upon still further movement of the cap portion 30, the legs 44 and bridge portion 46 of the first cap locking means 34 engages the first inclined surface 22 and upon application of pressure, rides over the ridge 26 to snap onto the second inclined surface 24, or to be put in another manner, the extension 20 snaps into the opening 48 of the second cap locking means 42. More or less simultaneously, the curved surface 38 of the first cap locking means 34 bears against the edge 15 of the lip 14 of the first platform locking means 12 until the bar 36 snaps into the recess 16 defined by the lip 14, as shown in Figure 5. In the locked position, the surface 37 abuts the wall 19 and the surface 39 abuts the wall 17, solidly retaining the bar 36 in the recess 16. As the cap portion 30 bears against the blade member B, the ridge 32 of the cap portion 30 enters the centre opening C of the blade, the ridge 32 being disposed between the projections 10. Referring to Figure 11, it will be seen that seating of the cap portion 30 upon the platform portion 4 bends the blade B to an arcuate configuration.

- 65 The interlocking engagement of the first and second platform locking means 12, 18 with the first and second cap locking means 34, 42

securely fastens the cap portion 30 to the platform portion 4 at either end thereof. The hinge portion 50 is not depended upon for retention of the cap and platform portions together, once it has served its hinging function. Thus, the first end of the razor is securely held together without contribution from the hinge portion.

- 75 It is to be understood that the present invention is by no means limited to the particular construction herein disclosed and/or shown in the drawings, but also comprises any modifications or equivalents within the scope of the disclosure.

Claims

1. A safety razor comprising a handle portion, a platform portion moulded integrally with the handle portion, a cap portion moulded integrally with the platform portion, a hinge portion at a first end of the platform portion and a first end of the cap portion interconnecting the platform portion and the cap portion, the cap portion having first cap locking means at its first end thereof and second cap locking means at a second end thereof, the platform portion having first platform locking means at its first end and second platform locking means at a second end thereof, the cap portion being adapted by flexure of the hinge portion to overlie the platform portion, the first cap locking means being engageable with the first platform locking means to securely fasten the first cap end to the first platform end, and the second cap locking means being engageable with the second platform locking means to securely fasten the second cap end to the second platform end.

2. A razor according to claim 1, in which the first platform locking means comprises a lip extending outwardly from the said first end of the platform portion and defining a recess thereunder, and the first cap locking means comprises a bar engageable in the said recess to lock said first end of said cap portion to said first end of said platform portion.

3. A razor according to claim 2, in which the bar is provided with a curved surface engageable with the lip to guide said bar into the recess.
4. A razor according to claim 3, in which the lip is provided with a rounded edge portion engageable by the said curved surface.

5. A razor according to claim 4, in which the said bar is provided with first and second flat surfaces on either side respectively of the said curved surface, the flat surfaces being normal to each other and the said recess having first and second walls normal to each other, the said flat surfaces being engageable with the respective said walls to anchor the bar securely in the recess.

6. A razor according to any preceding claim, in which the second platform locking means comprises an extension directed outwardly from the second end of the platform portion, and the second cap locking means comprises legs extending from the second end of the cap portion and interconnected by a bridge portion to define an opening arranged to receive the said extension.

7. A razor according to claim 6, in which the extension is provided with a first inclined surface and a second inclined surface defining a ridge, the first inclined surface being arranged to be engaged by the bridge portion, and upon application of pressure, to guide the bridge portion over the ridge, whereby to facilitate the bridge portion snapping onto said second inclined surface.

10 8. A razor according to any preceding claim, including projections upstanding from said platform portion and adapted to enter a central opening of a blade member, and ridge means depending from the cap portion and adapted to enter the central opening of the blade member.

15 9. A safety razor, substantially as herein described with reference to the accompanying drawings.